

REMARKS

Amendments

Claim 1 has been cancelled, and claims 2-19 have been amended to present product-by-process claims depending from Claim 20.

Claim 20 has been amended to recite that the solvent is a solvent having a Kauri-butanol number less than 30 ml, and also to more fully describe the nature of the S portion and the D portion of the amphipathic copolymer. Antecedent basis for these amendments is located in original claim 26, and also in the specification at page 11, lines 22-30.

Claim 26 has been cancelled in favor of claim 20 as amended.

Claims 31 and 32 have been amended to fully recite steps taken in carrying out the image formation. These amendments find antecedent basis throughout the specification as filed, particularly at page 33, lines 14-28. Additionally, these claims have been amended to depend from claim 30.

Claim Rejections – 35 USC § 112

Claims 23 and 31 have been rejected under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Office Action objects to the term “toner additive” as having no limit and not further defining the independent claim. This rejection is respectfully traversed.

The term “toner additive” is discussed in the specification at page 10, lines 1-3 as being materials “such as charge control agents, surface flow agents, and the like.” It is respectfully submitted that in the context of the present invention and the teaching of the specification, this term would be immediately recognized as encompassing those additives that are conventionally provided in the toner art. Specifically reciting the presence of such additives therefore is both definite and further limits the scope of the claim.

Claim 31 has been amended to fully recite steps taken in carrying out the image formation. It is respectfully submitted that this amendment overcomes the objection

stated in the Office Action. Because claim 32 contains similar language, this claim has likewise been amended to expedite prosecution.

Claim 30 has been objected to under 37 CFR 1.75 as being a substantial duplicate of claim 1. Claim 1 has been cancelled.

Claim Rejections – 35 USC § 103

Claims 1-34 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Keoshkerian et al (5,714,993) in view of Paine (5,304,450, Sacripante et al (5,213,934) and Li et al (5,886,067).

The present claims as amended are drawn to a method for making dry electrographic toner compositions, wherein the toner particles are prepared by forming an amphipathic copolymer the presence of at least one visual enhancement additive in a solvent having a Kauri-Butanol number less than about 30 mL. The particles so made encapsulate the visual enhancement additive in the amphipathic copolymer, and are dried under conditions so that the particles are at a temperature below the T_g of both the D portion of the copolymer and the polymer as a whole. This process provides unique dry electrographic toner compositions because of the unique chemistry as dictated by the selection of the reaction solvent. Further, because this reaction solvent is non-aqueous, the drying process enjoys a substantial benefit due to the relative ease of drying the particles as compared to aqueous systems. See the present specification at page 5, lines 1-7. Additionally, because the particles are dried under conditions so that the particles are at a temperature below the T_g of both the D portion of the copolymer and the polymer as a whole, the particles advantageously do not agglomerate or aggregate. See the present specification at page 30, lines 1-2.

Keoshkerian is cited to teach the reaction of a hydrophobic stabilizer and a pigment with a hydrophilic polymer. As noted in the Office Action, the polymer described therein is a diblock copolymer that has one block that is water soluble and the other water insoluble. Thus, the reaction that would take place would require that, if one

were to dry the particles, one would have to do so from water. Keoshkerian thus does not teach or suggest the method as presently claimed.

Li is cited for its teaching regarding the term amphipathic. However, Li relates only to liquid toners, and does not contemplate the provision of dry toners. Further, Li does not contemplate forming an amphipathic copolymer in the presence of at least one visual enhancement additive in a solvent to encapsulate the visual enhancement additive. One would not combine these references without the teaching of the present specification and claims.

Paine is cited for the teaching of a process of using a steric stabilizer in the preparation of toner particles. The process as taught in Paine, however, teaches the use of solvents for the formation of the toner particles that do not satisfy the present Kauri-butanol requirements. See column 8, lines 1-12. The process as taught therein requires sequential application of solvent, and does not introduce a pigment or dye until after the particle is formed. See column 9, lines 41-45 and Example VIII, etc. Again, one would not combine these references without the teaching of the present specification and claims.

Sacripante is cited for the teaching of use of polyfunctional reagents in the formation of microcapsules. The Sacripante microcapsules, however, have water soluble shell components and thus do not satisfy the present claims. See, e.g., column 3, line 25.

It is respectfully submitted that the cited references do not, alone or in combination, render the presently claimed method and the products prepared by that method obvious. One would not have considered making dry electrographic toner particles by dispersing a visual enhancement additive in a composition comprising a solvent having a Kauri-butanol number less than 30 ml and S portion prepolymer, and then conducted a dispersion polymerization by reacting D portion materials with the S portion prepolymer to form an amphipathic copolymer to encapsulate the visual enhancement additive within a layer of amphipathic copolymer to form encapsulated pigmented organosol particles by the teaching of the prior art. Further, the skilled artisan would not have expected the advantages in performance characteristics and

easy of drying of encapsulated pigmented organosol particles as realized in the present invention.

Double Patenting

Claim 1 has been provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/612,243, 10/612,535, 10/881,011 and 10/881,023.

Claim 1 has been cancelled, thereby obviating this rejection. It is respectfully submitted that the presently claimed subject matter recites elements and features that are patentably distinct from the claims of the copending applications cited above.

In view of the distinctions of the presently claimed subject matter over all of the cited art, when considered alone or in combination, it is respectfully submitted that the outstanding rejections have been overcome.

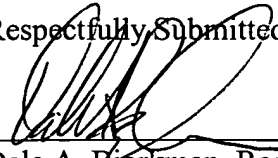
Conclusion

In view of the above remarks and amendments, it is respectfully submitted that the present application is now in condition for allowance. Early favorable consideration of the above application is earnestly solicited. In the event that a phone conference between the Examiner and the Applicant's undersigned attorney would help resolve any issues in the application, the Examiner is invited to contact said attorney at (651) 275-9811.

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By:

Respectfully Submitted,


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